

# Distinguished Lecture

## Computer simulation on the system level

*Dr. Franz Schlagenhauser, Senior Research Fellow, University of Western Australia, Perth*

Datum: **22 februari 2008**  
Tijd: **13.00 – 15.00 uur**  
Plaats: **Hogeschool van Amsterdam**  
**Weesperzijde 190, 1097 DZ Amsterdam**  
**Zaal C01-04**

### **Abstract**

Computer simulation is increasingly used as a tool to predict and manage the electromagnetic behaviour on the system level. The presentation will address the five basic steps of a typical simulation process and give some examples:

- Modelling: simplification and neglecting non-essential parts of the physical model.
- Meshing: segment size based on wavelength and structural discontinuities.
- Computation: estimating calculation time and resource requirements.
- Validation of the results: boundary conditions, power budget, field and current distributions, sensitivity for variation of input data.
- Post-processing routines.

When it comes to field simulation for complex systems some particularities can be noted:

- The modeling stage will, in most cases, involve significant simplifications of the physical structure, and the effect of these simplifications on the overall results must be estimated.
- The outcome from the simulations will, in most cases, not be the final result, but rather the simulation results will be the input data for the actual system analysis.

This makes a simulation for EMC purposes significantly different to many computations in RF-design applications.

### **Author's brief biography**

Dr Franz Schlagenhauser  
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Dr Franz Schlagenhauser has studied Electric Engineering at the Technical University Munich, Germany and completed with the Diploma Degree in 1988. From 1988 until 1992 he was PhD student at the Technical University Hamburg-Harburg, and obtained the Doctorate in Engineering in 1994 with his thesis "Field Excitation of Multiconductor Lines with Non-linear Terminations".

He was manager of the EMC laboratory at MAZ (Microelectronic Application Centre) in Hamburg from 1992 until 1995 and Technical Manager of EMCSI (Electromagnetic Compatibility and Systems Integration) Pty Ltd, Melbourne, Australia, from 1996 until 1999. During this time he was involved in EMC testing according to civilian and military standards and presented numerous workshops about EMC testing and design to industry.

Since 2000 he is Senior Research Fellow at The University of Western Australia, Perth, where his topics of interest are computer simulation of PCBs and shielding enclosures. He is a senior member of the IEEE (EMC-S, AP-S and MTT-S) and has been appointed as IEEE Distinguished Lecturer in EMC for 2007/2008.

### **Organisatie en aanmelding**

Deze 'Distinguished lecture' wordt georganiseerd door IEEE EMC Benelux Chapter, in samenwerking met de Nederlandse EMC-ESD Vereniging. De toegang is gratis, maar wij verzoeken u vriendelijk om u vooraf aan te melden via e-mail: [cees@ieee.org](mailto:cees@ieee.org).

### **Bereikbaarheid Hogeschool van Amsterdam**

De Hogeschool (<http://www.hva.nl/locaties>) ligt pal naast het Amstelstation en het aantal parkeerplaatsen is zeer beperkt. Wij adviseren u per trein te reizen en anders eerst contact op te nemen met Cees Keyer ([cees@ieee.org](mailto:cees@ieee.org)).

Secretariaat Nederlandse EMC-ESD Vereniging  
Chris van den Dries